Notice of Allowability	Application No.	Applicant(s)	
	10/828,901	NELSESTUEN, GARY L.	
	Examiner	Art Unit	
	Alexander D. Kim	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *6 August 2007*.

2. ☒ The allowed claim(s) is/are *61-72*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 5/10/2007
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Application Status

1. In response to the previous Office action, a Non-Final rejection (mailed on 01/25/2007), Applicants filed a response and amendment received on 5/10/2007.

Said amendment cancelled Claims 1-60 and added new claims 71-72. In view of the examiner's amendment as set forth below, Claims 61-72 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 05/10/2007, with a submission fee, was filed after the mailing date of the Non-Final rejection on 07/14/2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Terminal disclaimers

3. The terminal disclaimers filed on 5/10/2007, 6/25/2007 and 8/3/2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Pat. 6,747003, US Patent Application 10/855068, or US Pat. 6,762,286 have been reviewed and is accepted. The terminal disclaimers have been recorded.

Examiner's amendment to the Claims

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment shown below was given in a telephone interview with Elizabeth Kaytor on 06 August 2007 and 07 August 2007.

Replace the claim listing filed on 05/10/2007 with the following claim listing.

1-60. (Canceled)

61. A composition comprising an anticoagulant agent and a protein C polypeptide or activated protein C polypeptide wherein said polypeptide comprises a modified GLA domain, said modified GLA domain comprising the amino acid sequence of SEQ ID NO: 1 with one, two, three, four, or five amino acid substitutions at positions selected from the group consisting of residues 10, 11, 28, 32, and 33.

62. The composition of claim 61, wherein said anticoagulant agent is aspirin, warfarin, or heparin.

63. The composition of claim 61, wherein said anticoagulant agent is aspirin.

64. The composition of claim 61, wherein said one amino acid substitution is at residue 10.

65. The composition of claim 61, wherein said one amino acid substitution is at residue 11.

66. The composition of claim 61, wherein said one amino acid substitution is at residue 28.

67. The composition of claim 61, wherein said one amino acid substitution is at residue 33.

68. The composition of claim 61, wherein said modified GLA domain comprises the amino acid sequence of SEQ ID NO:1 with three amino acid substitutions at residues 11, 32, and 33.

69. The composition of claim 68, wherein residue 21 of SEQ ID NO:1 is glutamic acid and residue 33 of SEQ ID NO:1 is aspartic acid.

70. The composition of claim 69, wherein residue 11 of SEQ ID NO:1 is glycine.

71. The composition of claim 61, wherein said modified GLA domain comprises the amino acid sequence of SEQ ID NO:1 with two amino acid substitutions at residues 32 and 33.

72 The composition of claim 71, wherein residue 32 of SEQ ID NO:1 is glutamic acid and residue 33 of SEQ ID NO:1 is aspartic acid.

Statement of Reasons for Allowance

5. Claims 61-72 are allowed. The following is an examiner's statement of reasons for allowance:

The instant invention is drawn to a composition comprising an anticoagulant agent and a protein C or activated protein C polypeptide comprising a modified GLA domain, said modified GLA domain comprising the amino acid sequence of SEQ ID NO: 1 with one, two, three, four, or five amino acid substitutions at positions selected from the group consisting of residues 10, 11, 28, 32, and 33 (Claims 62-72 dependent therefrom).

Protein C is vitamin-K dependent protein and activated by thrombin in the presence of thrombomodulin. The activated protein C (APC) degrades factors Va and VIIIa in combination with cofactor protein S. The instant invention provides a protein C or activated protein C with enhanced membrane binding affinity for modulating clot formations.

The claimed composition comprising the polypeptide comprising the SEQ ID NO: 1 with recited substitution(s) is novel given the protein C is a known genus. The SEQ ID NO: 1 with mutations are known in the prior art. However, the prior art disclose a Factor VII polypeptide comprising SEQ ID NO: 1, which is distinct from a well known genus of claimed protein C or activated protein C. For example, while the reference of Griffin et. al. (WO9309804-A1, publication date: 27-May-1993) teach a polypeptide comprising 100% identity to the instant SEQ ID NO: 3, which have five substitutions in recited residues, wherein the

polypeptide is Factor VII. The additional limitation of an anticoagulant agent in Claim 61 is a species, which is not obvious and there is no motivation to combine an anticoagulant agent with the claimed protein C or activated protein C. Thus, in view of the examiner's amendment and approval of terminal disclaimers, all outstanding rejections are withdrawn.

Thus, all pending claims 61-72 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander D. Kim whose telephone number is (571) 272-5266. The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Bragdon can be reached on (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexander Kim
August 7, 2007

KATHLEEN KERR BRAGDON, PH.D.
SUPERVISORY PATENT EXAMINER